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a report from

THE EL NIÑO TASK FORCE

winter 1997-1998

Santa Clara Valley Water District

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May 13, 1998

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EXECUTIVE SUMMARY

In the fall of 1997 General Manager Stanley Williams established a task force of District personnel to implement "extraordinary" winter preparedness actions to ready the citizens of Santa Clara County and its waterways for a potentially heavy rainfall season associated with "El Niño."

Task force members met regularly to coordinate efforts toward the goal of winter preparedness. Such efforts included an extensive public outreach program consisting of the "Hey Noah" campaign, sandbag availability, community meetings, and direct notification of the 70,000 property owners who reside within the one-percent flood hazard area.

During February, as a result of heavy rainfall, significant flooding occurred at several locations throughout the county. The District activated its Emergency Operations Center to coordinate information, respond to calls from the public, and manage our response effort.

After the flooding, the task force coordinated a videographic record of the events and conducted four post flood community meetings to obtain information about the flooding directly from its victims.

The task force accomplished its mission of preparedness for this season and has summarized its achievements and "Lessons Learned" in this report. The principal lesson was that the internal coordination accomplished by this task force helped all of us to do a better job, and a similar approach should be utilized in future years for winter preparedness.

INTRODUCTION

In fall 1997, the publication of scientific data by such agencies as the National Climate Center and the Scripp's Institute indicated the potential for a significant "El Niño" event during the 1997-98 winter season. The El Niño phenomenon produces abnormally high sea surface temperatures at the equatorial Pacific. This condition may have substantial worldwide weather implications. In the United States, an El Niño event will often produce below normal precipitation in the northern portion of the United States and above normal precipitation in the southern portion. In September 1997, District staff met with Norm Hoffman, the Meteorologist in Charge for the National Weather Service at his Monterey office to obtain a briefing on the potential of the El Niño Southern Oscillation (ENSO) on the forthcoming winter season. Much media attention had been devoted to describing the potential for a considerably severe winter in the southern potion of the United States. Mr. Hoffman indicated the 1998 ENSO phenomenon had the potential to produce up to 200% of our average rainfall volume during the 1997-98 rainfall season. To date, we are 175% of normal and have experienced the fourth wettest season since 1874.

Since 1949, there have been nine El Niño events including 1997-98. Annual rainfall in San Jose, including the El Niño years, is shown in Figure 1. Seven of those El Niño years produced above average rainfall, one year was average (1992), and one was below average (1966). The District has experienced significant flooding during both El Niño and non-El Niño years.

In response to this information, District General Manager Stanley Williams created an El Niño Task Force of District personnel with the primary goals as follows:

- To recommend and help implement extraordinary emergency preparedness actions to ready Santa Clara County's citizens and waterways.
- To advise the community of the District's efforts to monitor storm events and minimize the impacts of flooding in Santa Clara County.

The creation of the task force also acknowledged that the sustained level of media and public attention to the potential impacts of El Niño provided a rare opportunity to:

- Work with the regulatory agencies to resolve short and long term permitting issues.
- Communicate long-term flood management challenges to local officials and the general public.

In his memo, the General Manager also indicated that the efforts put forth under the umbrella of the El Niño Task Force are the District's highest short-term priority and requested that resources from throughout the District be utilized to accomplish the Task Force's goals. The El Niño Task Force had its first meeting on October 8, 1997, and agreed to meet twice weekly on Tuesday and Thursday mornings through the primary rainfall months. The Task Force met for the last time on May 13, 1998 to finalize this report.

ANNUAL RAINFALL AT SAN JOSE AND EL NINO
1949 to 1998
(as of May '98)

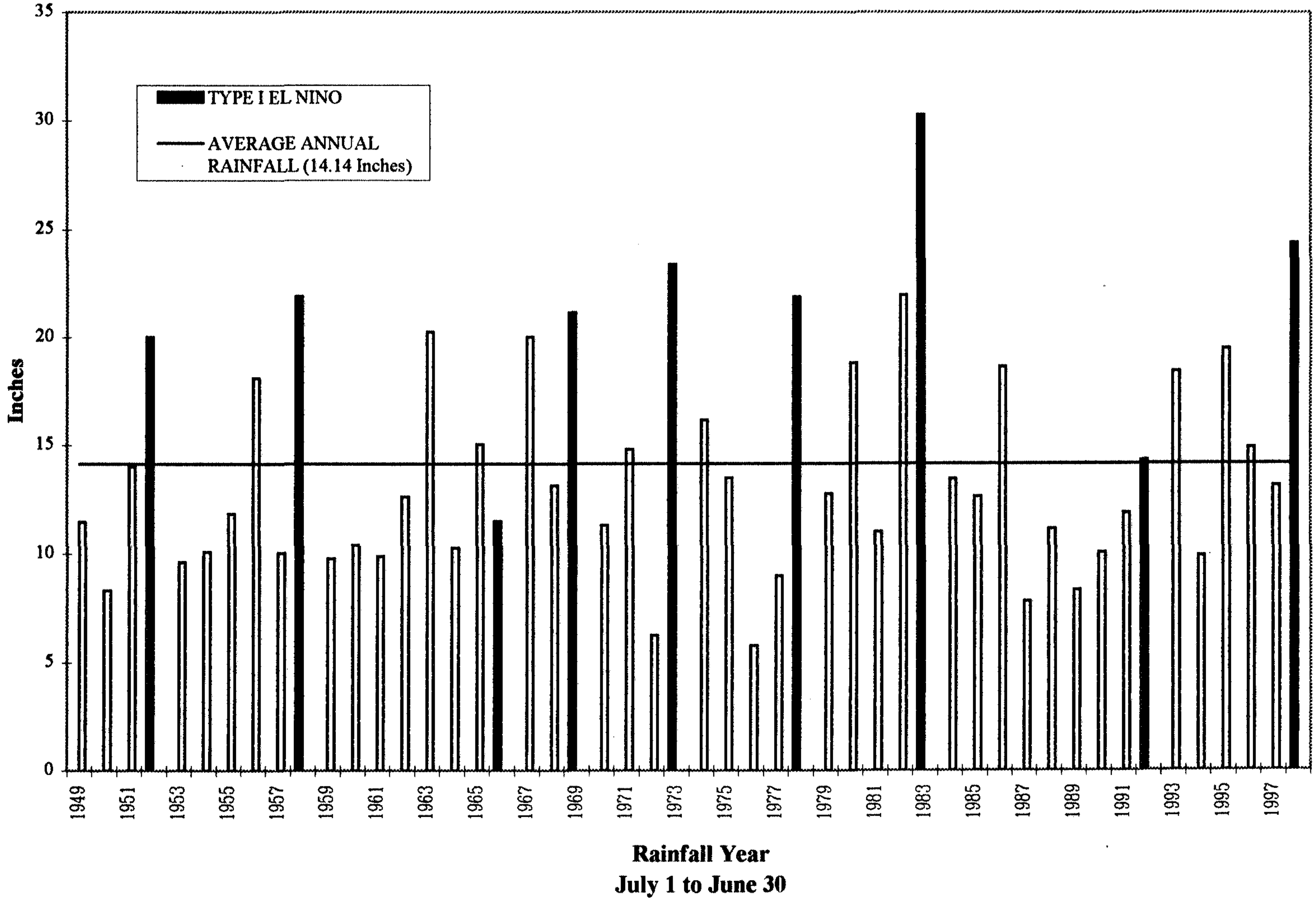


Figure 1

PURPOSE

The purpose of this report is to summarize the activities and accomplishments of the El Niño Task Force as well the lessons learned and recommendations from the collective experiences of its members.

PUBLIC OUTREACH

Take it From Someone With Experience

Entering its second year, "Noah Knows" has become the cornerstone of the FloodSAFE Program. This award-winning, multimedia campaign focuses primarily on personal safety and property protection. The choice of Noah, the world's most well prepared flood victim, as a spokesperson allows the use of subtle humor in dealing with this serious issue. This year we capitalized on the attention given to El Niño.

The "Noah" campaign began several weeks earlier this year in response to the El Niño hype.

Beginning in October, Noah appeared on radio and in newspaper ads asking the "chief" if this El Niño will bring drought or flood. The chief's message to Noah, and subsequently to the general public, was that in Santa Clara County we always need to be ready for both. The El Niño issue provided us a unique opportunity to link the district's two missions (water supply and flood management) in one public outreach campaign.

HEY-NOAH Toll-Free Hotline

The primary objective of the "Noah Knows" campaign is to create a basic awareness that floods can happen locally. All aspects of the campaign emphasize calling the 1-888-HEY-NOAH toll-free line for more information. The line gives callers a menu of choices including local sandbag sites, reservoir and stream flow information, and weather forecasts. Most important is the option to leave a request for flood safety and preparedness information—a comprehensive packet of materials from the District, FEMA, the Red Cross, and the National Weather Service. More than 1,000 requests for flood safety packets were received on the NOAH line this winter, compared to just 50 requests for the 1996-97 rainfall season.

Radio

Radio spots featured Noah (the voice of comedian Ronnie Schell) talking with the "chief" about a new round of floods that might hit the Santa Clara Valley, and specifically telling his boss that he's "Working with the people at the Santa Clara Valley Water District." Each radio spot ends with one of ten flood safety tips, e.g., "Noah knows the risks to his property . . . do you?" and prompts listeners to call the District to receive more information at 1-888-HEY-NOAH.

The Santa Clara County and bay area stations with the largest market shares were selected to air the spots. Six other stations, including one Spanish language station, were also selected. All stations also provided sponsored news and traffic reports in which the announcer read one of the flood safety tips.

Newspaper

In Santa Clara County, the most widely read newspaper is the *San Jose Mercury News*. For this reason, nearly all of the "Noah Knows" ads ran in the *Mercury News*. The campaign was prepared for 1997-98 but was started earlier in response to El Niño. The print portion of the campaign kicked off in October with an unprecedented seven-day run on the weather page. This clever progressive ad read like a comic strip, showing Noah in various expressions talking with his boss on a cell phone and building its message each day. Through November, ads ran with an "El Niño/Be Prepared for Drought or Flood" message.

From December through February print ads focused specifically on 10 flood safety tips. These print ads showcased Noah in a variety of situations: on the cell-phone, hoisting sandbags, wearing a District hard hat, and posing with the "FloodSAFE Kids." The ads were numbered, e.g., Tip #1, Tip #2, etc. to give the reader a sense that information was fresh each day. All print ads, like the radio, emphasized calling the District at the HEY-NOAH telephone number for more information.

Additionally, ads ran in the *Bay Area Parent,* a unique publication with a large and devoted readership. These ads featured Noah with a group of children—the FloodSAFE Kids—and focused on a parent's responsibility for teaching children flood safety.

Transit

This year, Noah made his debut in one additional venue–county transit buses. Ads appeared on the back panel and full (roof to tires) back of county buses. Transit advertising is one of the most effective and in-demand methods of outreach.

Sandbags

The FloodSAFE Program also included publicity for the District's free sandbag distribution program. Flyers with maps showing locations of the 26 sandbag distribution sites were developed. Neighborhood-specific sandbag location ads ran in community newspapers. Callers to HEY-NOAH could select a key to get a recorded list of sites in their neighborhoods. Flood-fighting information was developed for distribution at sandbag sites and to homeowner groups, and "how to" sandbag workshops were held in November, December, and January. During this winter, the District has distributed more than one million sandbags.

www.heynoah.com

The District's web site, scvwd.dst.ca.us, was expanded to provide access under www.heynoah.com. The web site added a map of sandbag locations, the one-percent flood hazard area, and areas with a history of flooding as new items in direct response to the El Niño concerns. Flood safety and flood insurance information and links to other related web sites such as FEMA were also made available. Using the "heynoah.com" alias for the web site made it easier for the public to access all the necessary information by having to remember only one catch phrase. The web site is one of the most dynamic information outlets available, and changes to its content are ongoing. At the height of the winter storms, the El Niño Task Force managed to overcome all technical and legal obstacles to allow users access to real-time stream flow, rainfall and reservoir storage information, previously available only to District staff.

Flood Awareness Booths

Did you know we do more for you than fill sandbags? The answer to that question is what we hope attracted shoppers to stop by our flood awareness booth. The booth, stocked with flood preparedness information and fun giveaways, appeared at four shopping malls during the height of the holiday shopping season.

Flood Hazard Area Postcards

At their first meeting in October, the El Niño Task Force considered direct mail to floodplain residents as an effective "extraordinary emergency preparedness action." The District's new GIS capability was used to prepare mailing lists of floodplain residents. A post card was designed, reviewed by FEMA's CRS coordinator, and printed. In December, nearly 70,000 postcards were mailed directly to property owners in the one-percent flood hazard area. This was the first time the District had notified all flood plain residents of their potential risk. The card communicated several simple, but key messages as follows:

- If you receive this card, there is a flood risk to your property.
- You live in the (resident specific) flood control zone.
- Your homeowner's insurance policy does not cover flood damage.
- The stormdrain system and creek system work together to manage storm water.
- The District does not own all the creeks.
- Dumping in creeks and storm drains is illegal.

Media Relations

The District has traditionally been successful in working with the media in covering water-related issues. This year we went one step further using a more proactive approach including issuing weekly news releases on some of the following topics:

- Introduce the "Noah Knows" Campaign.

- Urge residents to check out flood insurance.
- California Winter Storm Preparedness Week (October 24-30, 1997).
- How might this rainy season compare to the last El Niño winter?
- Location of sandbag distribution sites. Free sandbag workshops offered.
- District maintenance crews receive flood fighting training.
- Community preparedness meetings were conducted.
- Flood hazard area postcards were mailed.

With a little help from El Niño, the weekly news releases were well received, resulting in the most media coverage for the District since the drought. The *Mercury News* published a comprehensive story on the District's 15 years of work to complete flood protection projects, including a full-page color map showing the one-percent flood hazard area, extraordinary coverage for the District. Media packets mailed out wrapped in an empty sandbag were also well received, prompting one reporter to comment "Aah, the smell of burlap in the newsroom."

Public Awareness Surveys

Public awareness surveys were conducted in May 1997 and April 1998 as part of an ongoing evaluation of our outreach programs. In both cases, people surveyed were asked to rate the job they thought the District was doing in certain functional areas. The results demonstrate the success of our extraordinary El Niño efforts this past winter. The following table indicated the percentage of respondents who thought we did a good job at a task.

AREA	1997	1998
Cleaning Creeks	45%	53%
Providing Information About What to do in a Flood	32%	63%
Managing Floodwaters	59%	65%
Providing Sandbags	38%	72%

PUBLIC WORKS PERSONNEL MEETINGS

In the fall, District staff met with the public works staff of the 15 incorporated cities in Santa Clara County. The purpose of these meetings was to advise the personnel, who are normally the first responders during flooding events, the status of District flood control facilities, our proposed reservoir operations plans and the availability of rainfall, stream flow, and reservoir storage information through the District's Hydrologic Data Network. These meetings were held on October 20 and 23, 1997.

OTHER PUBLIC MEETINGS

In addition to the meetings normally held with the public works personnel, District staff also made a special El Niño presentation at each of the five Flood Control Zone Advisory Committee meetings during September 1997.

During November and December, seven community meetings regarding winter preparedness and El Niño were held throughout the county. These meetings featured presentations by District engineers, maintenance, and emergency operations staff. Local law enforcement, PG&E, and the Red Cross also participated in the program.

There were over 50 requests for special presentations to service organizations, and each Santa Clara County Supervisor requested and was given a special presentation in his/her respective Supervisorial District on the potential of El Niño in Santa Clara County and what measures the District had taken to prepare for this event.

OPERATIONS AND MAINTENANCE ACTIVITIES

Operations and Maintenance Group activities supported the El Niño Task Force goals and objectives this last winter in the following areas:

Interagency Cooperation and Assistance

In preparation for the winter rains, District staff jointly inspected various creeks with staff from other cities. Maintenance priorities were adjusted accordingly to address areas of concern, and flood response operations were tailored to better manage known trouble spots. For example, railroad trestle bridges which are known to trap debris were inspected more frequently before, during, and after high flow events to remove the accumulated debris. Another example is that some work, such as vegetation removal in Morgan Hill, was done earlier in the year than normal because of the possibility of early rains. District staff, experts in channel maintenance, assisted staff from Caltrans in a coordinated effort to remove sediment from San Francisquito Creek downstream of Highway 101. Both agencies used best management practices installed by the District to control turbidity and other water quality concerns.

During flood events, District resources and expertise were used to support other cities' bank stabilization efforts as in the case where erosion on the Guadalupe River closed a portion of Old Almaden Road in San Jose.

Winter Preparedness

Normally, the District can perform flood control maintenance in a watercourse only if it has sufficient title or right of way. An exception is that, during an emergency, the District may provide flood control maintenance on private property to the extent of its resources and its ability. Under the District's Ordinance 83-2, the responsibility to maintain those privately-owned watercourses rests with the owners of that property. A departure by the Board of Directors from normal policy occurred this year due to the high probability of an above-normal rainfall. The Board determined that performing maintenance on non-District property this year is consistent with the District's policy on flood control responsibility if found to be in the public interest and primarily for the public benefit. Criteria were adopted under which the District was able to perform work on private property subject to the owners' permission. This work could be done after determining that the work would not interfere with satisfying the District's flood control responsibility on property where the District has appropriate rights of way. See attached December 18, 1997 memo to Stan Williams from Marc Klemencic.

In another response to community concerns about the possible severity of the El Niño winter, District crews removed sediment at locations that, under the maintenance guidelines for those facilities, were in an acceptable maintenance condition. During the winter, crews removed redeposited sediments at several key locations to restore the lost capacity following some of the more significant high flows.

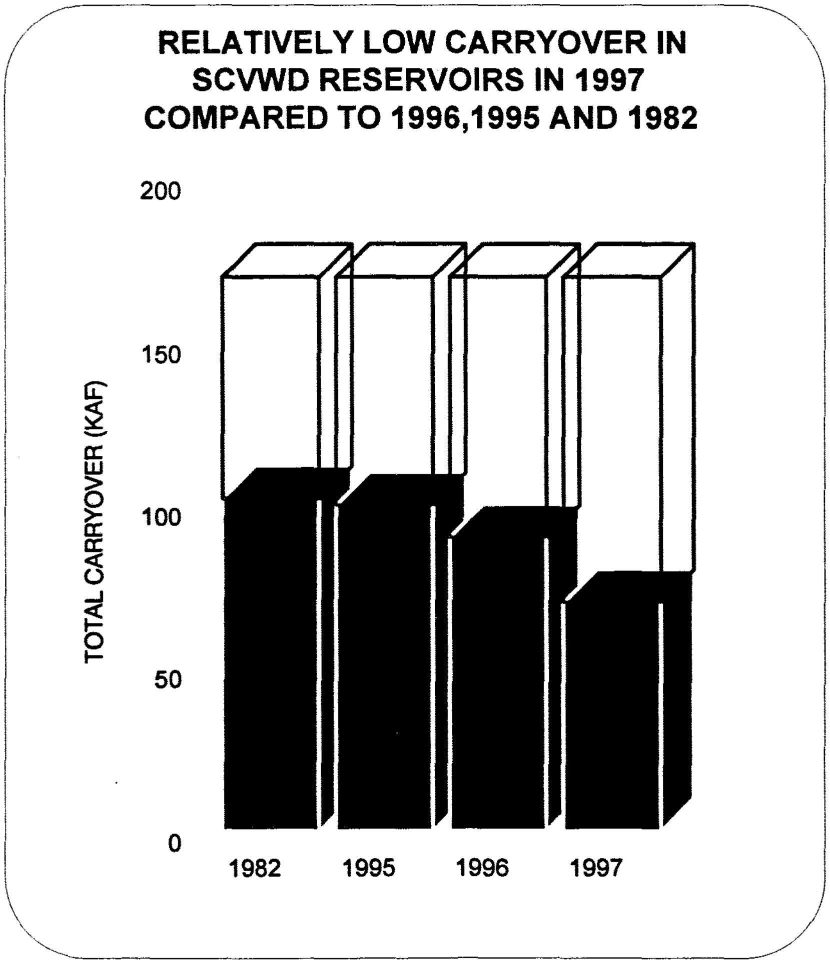


Figure 2

RESERVOIR OPERATIONS

SCVWD reservoir operations were modified in response to the possibility of significant rainfall due to the strong El Niño condition.

The initial operational action taken through the summer and into the fall was to maximize utilization of water stored in District reservoirs. As a consequence, end-of-year storage volume in District Reservoirs for 1997 was substantially lower (Fig. 2) than it was for 1996, 1995 or 1982 (prior to 1983 a record rainfall and El Niño year). The lower end-of-season storage in District reservoirs provided capacity for additional retention of potential flood waters.

For the 1997-98 season, the District adopted new operating strategies for some reservoirs to reduce flood probability to the extent that the impact on their water supply function would be minimal. These strategies recognize that if the reservoir storage approaches full early enough in the rainfall season, some water can be released to create increased flood storage without significantly reducing the probability of refilling the reservoir by the end of the season. Storage levels for specific months during the winter were prescribed. When above these levels, releases were to be made to maintain some flood storage. (Fig. 3)

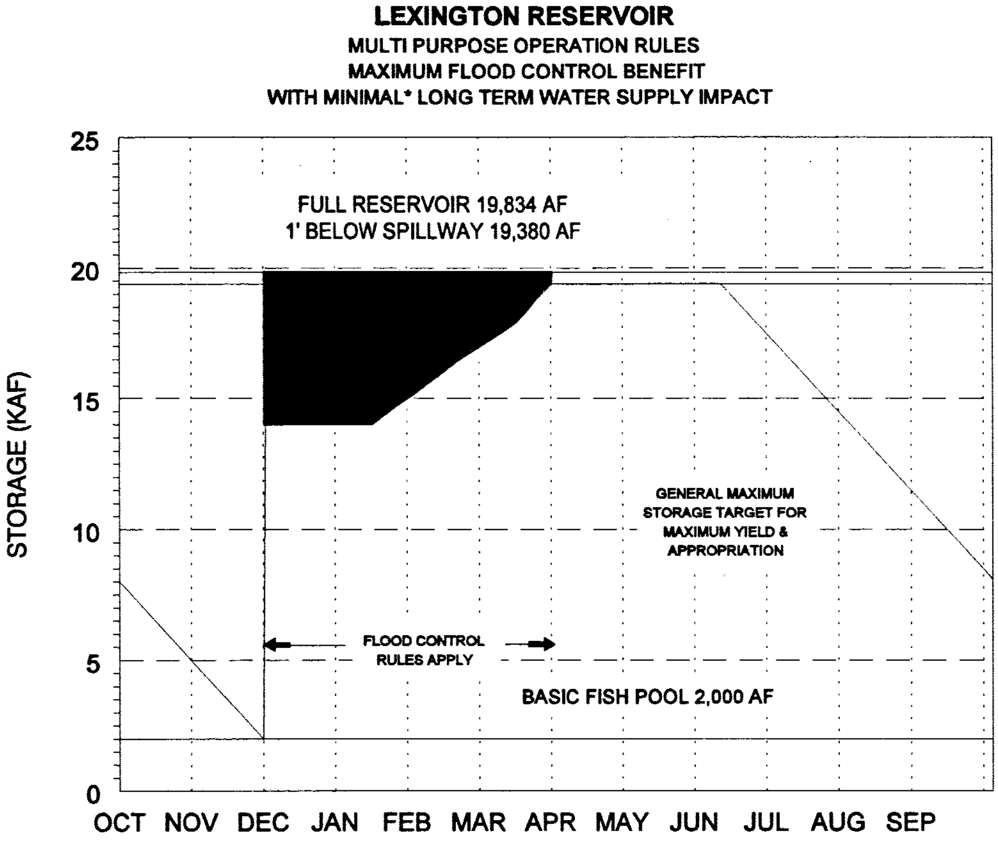


Figure 3

Previously, with the exception of Anderson, Coyote and Chesbro reservoirs, winter releases have been made from the reservoirs only to provide for water supply needs of the county or where required by other special policies, regulations, or agreements. Since 1969, Anderson and Coyote reservoirs have been operated to reduce flood probability. The current operational criteria for Anderson & Coyote were developed in 1982 to provide additional flood protection benefit with minimal impact to water conservation. Chesbro Reservoir is operated to criteria specified in the bond measure that provided for its construction. The bond measure specified that a dedicated flood storage pool of 3,500 acre-feet must be provided at all times.

Operating to provide flood storage required a significant increase in facility management effort. Storage levels and release rates were continuously monitored and evaluated to ensure compliance with the operational strategies and to avoid aggravating or compounding downstream problems. A four-point checklist was developed to ensure a systematic approach to operational decisions (Fig.4). A program was developed to use National Weather Service Quantitative Precipitation Forecasts to predict flow rates in the uncontrolled watershed downstream of the Reservoirs. Reservoir releases were discontinued temporarily when predicted flow rates exceeded a safe level.

FOUR POINT CHECKLIST FOR
DECISION TO OPEN OR CLOSE
RESERVOIR OUTLET

1. CHECK WEATHER FORCAST FOR PRECIPITATION CAPABLE OF GENERATING FLOOD FLOW IN UNCONTROLLED WATERSHED
    - USE NATIONAL WEATHER SERVICE QUANTATATIVE PRECIPITATION FORCAST (QPF)
    - WATERSHED RUNOFF MODEL
2. CHECK FLOWS DOWNSTREAM
    - ESTABLISH THAT FLOW INCREASE DUE TO RELEASE WILL NOT EXCEED CHANNEL CAPACITY DOWNSTREAM
3. CHECK FOR WEATHER ADVISORIES
    - NO RESERVOIR RELEASES DURING FLOOD ADVISORIES
4. CHECK FOR EXISTING PROBLEMS DOWNSTREAM
    - CHECK WITH FLOOD INFORMATION
    - CHECK WITH MAINTENANCE PLANNERS

Figure 4

SANDBAG PROGRAM

In response to the projection of an excessively wet winter, the Special Projects Unit of Operations and Maintenance made several changes to the District Sandbag Program for the winter of 1997-98. The following is a summary of the improvements in the program made to prepare for the storm season.

In August 1997, 200,000 empty bags were on hand at the Winfield Warehouse. An additional 400,000 were ordered to ensure enough stock would be available for the season. This total of 600,000 bags represented a 60% increase over the total distributed during the winter of 1996-97.

San Jose Conservation Corps crews began making bags Monday, September 8, 1997. Filled bags were available for the public at the District's Winfield yard beginning Monday, October 6, 1997. This production continued at various levels until Monday, March 9, 1998. More than 700,000 bags were filled at the Winfield Yard during this period. In addition to the filled bags, over 65,000 empty bags were given out to the city and county public works agencies. This number compared with 52,000 in 1996-97.

El Niño Arrives

At noon Monday, February 2, 1998, all eleven of the satellite sites were fully stocked with a total of more than 40,000 filled bags. The Winfield yard held an additional 63,000 filled bags. Over 127,000 filled bags had been given out to the general public and businesses in the county between October 1, 1997 and February 1, 1998. By 5 p.m. Tuesday, February 3, 1998, over 56,000 filled bags were taken out of Winfield. Even with the ability to produce between three and four thousand bags per hour, crews could not keep up with the demand. On Tuesday evening, the inventory of empty bags had been reduced from 253,000 to below 100,000. An order for an additional 300,000 bags was placed for delivery on Friday, February 6, 1998.

The demand for filled bags at the satellite sites exceeding the supply prompted a short-term change in the program. Between February 4 and February 11, 1998, sand, shovels and empty bags were delivered to all of the satellite sites. The public was asked to fill their own bags during this period while the District was performing necessary repairs to facilities using the sandbags being filled by the San Jose Conservation Corps and placed by the California Conservation Corps. Facilities in need of repair included levees on San Tomas, Sunnyvale East, Calera, Coyote Canal and the Penitencia Perc System. More than 35,000 bags were used to provide temporary repairs to these facilities.

On the evening of Thursday, February 5, 1998, the supply of empty bags fell to below 40,000. A decision was made to close the Winfield yard to the public and save these bags for emergency reserve use on District facilities. The San Jose Police Department was called in to assist in the closing of the yard. At 5 a.m. on February 6, 1998, the shipment of 300,000 new bags was delivered, and the yard reopened.

By Saturday, February 7, 1998, the total number of staff involved in the sandbag program included 90 corps members from the SJCC, 50 corps members from the CCC, 80 inmates from the Elmwood Corrections facility, 12 District staff, and 8 contract truck drivers.

By Wednesday, February 11, 1998, all of the satellite sites were fully restocked with filled bags, and 18,000 filled bags were stockpiled at Winfield. During the period between February 2 and February 11, 1998, over 600,000 bags were distributed. More than 400,000 of these were filled by District resources.

In anticipation of continued storm systems through the remainder of February and March, orders were placed for additional sandbags to be delivered through the end of March. A total of 1,630,000 bags were ordered during the first two weeks of February. This brought the total number of bags ordered for the 1997-98 season up to 2,230,000.

Mutual Aid

In early March, the City of San Jose requested 70,000 filled sandbags for construction of a temporary levee adjacent to the Golden Wheel Mobile Home Park. The District provided the labor to fill the bags and helped set up a CCC crew to place the bags with the City.

Sandbag Summary

The total numbers for the program for the 1997/98 season are as follows:

Sandbags distributed	1,105,000
Sand Used	8,600 tons
Total Program Cost	$2,018,315

The funds budgeted for this project for FY 1997-98 totaled $199,201. Additional savings to the program have been gained by trading the recycled sand used for the bags for base rock with a local rockery on a dollar-for-dollar basis.

The cost breakdown by cost center is as follows:

NW	NC	C	E	S	RW
16%	11%	20%	19%	25%	9%

The expenditures do not match where the actual problems were encountered. This may be explained by the fact that public preparation was greater in the central and south cost centers due to the recent flooding events of 1995 on Guadalupe and 1997 in Morgan Hill. Demand at the locations in these two cost centers was much higher leading up to the February events.

EMERGENCY OPERATIONS CENTER ACTIVITIES

During February, two major storm events occurred which caused severe flooding in several areas of the north county. (These events will be documented in a flood report to be prepared separately.) The rainfall from these events also caused all ten District owned and operated reservoirs to fill and spill. During these storm events and throughout the period our reservoirs continued to spill, the District's Emergency Operations Center (EOC) remained open and operating on a 24 hour-a-day basis. The EOC provided a location from which all District activities related to the storm and flooding were coordinated. The EOC remained partially activated throughout February.

Videography

In anticipation of winter flooding, the District arranged for two videographers to be available in order to capture flood damage on both video and photographic media. This arrangement worked most satisfactorily since widespread flooding occurred this season, and our videographers were able to obtain both aerial and ground shots of the flooding events. This information was most helpful to both the District and the various city staff personnel to more accurately assess the extent of the flooding and the associated damage. The video footage was edited and shown at the post flood meetings.

Video services were also utilized during our post flood meetings to document public comments.

Telephone Volunteers

During October, the task force, in anticipation of heavy response to the HEY-NOAH Campaign and media "El Niño" hype, established a District staff volunteer group to handle calls in the EOC. Nearly 60 employees volunteered to staff the phone bank in the EOC. A manual was developed providing information regarding sandbag locations (maps and directions to the sites), frequently asked questions and answers, status reports, District web site information guide, and miscellaneous material.

A training session was held for telephone volunteers. Two radio refresher training classes were organized where Michael Duffield from County Communications discussed general radio operating procedures, rules for radio use, and FCC rules and regulations. Two tours of county communications were conducted for District staff.

Approximately 2,000 calls were answered and documented by staff on the EOC phone bank. The subject matter of these calls was as follows:

SUBJECT	%
Sandbag information including location and direction to sites, hours, quantities, cost, how to sandbag, size, weight, and how to dispose of sandbags after the rainy season	55.0
Flood status involving stream height, reservoir level, storm watch status, rainfall amounts, and weather reports	15.0
Maintenance calls which required writing a work order and delivering it to O & M staff	10.0
Calls received as a direct response to newspaper articles and "flood hazard zone" postcards sent by PIO	6.0
Referred to other agencies	3.0
Callers requesting flood maps and/or asking if they are in a flood zone	2.5
El Niño information and "Hey Noah" packets	2.0
Community Meetings and Sandbag Workshops	1.5
Elderly and/or disabled requesting assistance with sandbags	1.0
Miscellaneous	4.0

An additional switchboard was installed in the EOC. Two additional outside lines were installed to improve the ability of the District work crews to have direct access to EOC staff.

Improvements in Data Communication via the Internet

In preparation for heavier than usual winter storms, several steps were taken by District staff to improve data communication about storm events. Each of the following steps was discussed and approved by the El Niño Task Force, within the framework of the regular meetings.

Four telephone operator stations were equipped with surplus computers from the warehouse. Each of the computers was connected to the District network and loaded with application software to allow for word processing, e-mail, and data retrieval from the District's web site. Training was also conducted for the telephone volunteers, so they could more readily use the information tools available.

Several new information items were added to the District's web site:

- Real-time stream flow, reservoir storage level, and precipitation gage data in the form of text/numeric tables, and geographic information system (GIS) orientation; this information is updated every 15 minutes.
- Sandbag pickup locations in a GIS format and scanned brochure graphic; also information about how to use sandbags was provided in the form of links to other web sites and a reproduction of a District brochure on the subject; the Hey Noah Campaign was also referenced.
- The one-percent flood hazard area was converted to a GIS format; several methods for zooming in on details were also implemented.
- A new web site server was installed in anticipation of heavy web site activity during emergency events, with capability to handle the new graphical applications.
- A method to automatically upload news bulletins from the Public Information Office.
- A link to a contracted weather forecast service that is updated biweekly and as required during heavy rainfall events.

Correspondence Tracking Program

A pilot system to track incoming correspondence related to flooding and El Niño was initiated in November 1997. The correspondence was routed through a mail assignment center and sent to a coordinator for tracking through draft, reviews, approvals, and mail out. District Form No. FC1366 was developed for this purpose. The goal was to respond to all letters in a timely manner. This system has processed 99 documents, and is currently 84 percent complete.

This was a trial system that may be expanded to include all incoming District correspondence.

FLOODING SUMMARY

A major Pacific storm carrying subtropical moisture swept over California on Sunday, February 1, and Monday, February 2, 1998. In the early morning hours of February 3, several creeks and rivers in Santa Clara County overtopped their banks causing flooding in many neighborhoods. The State Office of Emergency Services declared a state of emergency in Santa Clara County, as did various cities within the county. The heavy rains caused an estimated $20 million in damage in Santa Clara County. The City of Palo Alto was one of the most severely affected communities. San Francisquito Creek, an unimproved creek which defines a border between Santa Clara County and San Mateo County, overbanked causing record flooding throughout a large portion of Palo Alto. Most west valley streams were running full. Calabazas Creek flooded into adjacent homes and businesses in Cupertino. Calera Creek flooded at the confluence with Berryessa Creek in Milpitas, causing damage to many apartments. There were several street and highway closures throughout Santa Clara County. The Red Cross opened a shelter at Independence High School for residents evacuated from the Golden Wheel Mobile Home Park, which was flooded by an overbanking Coyote Creek. An additional emergency shelter was opened at Cubberly Community Center in Palo Alto. Flooding again occurred on February 7, affecting neighborhoods in San Jose and Cupertino.

Northwest Zone

San Francisquito Creek*. San Francisquito Creek overbanked at numerous locations, flooding more than 400 homes in Palo Alto. Three hundred twenty-five people in East Palo Alto were evacuated. The Palo Alto Unified School District closed all schools for the day on February 3, 1998. Classes at Stanford University were canceled for the day. Commuting and transportation were severely limited due to the closure of the Bayshore Freeway (State Highway 101) at San Francisquito Creek and other major arteries.

Adobe Creek*. Several properties in Los Altos and Los Altos Hills sustained damage due to flooding from Adobe Creek. Shoup Park and the community center were flooded to an approximate depth of five inches. At the City of Los Altos Redwood Preserve, a wooden vehicle bridge was dislodged from its footings and floated downstream. Fifty feet of wooden wall that forms the right bank of Adobe Creek failed and piled up downstream.

Hale Creek*. Evidence of overbanking on Hale Creek was observed at four locations--Covington Avenue, Rosita Avenue, Arboleda Drive, and the intersection of Mt. View Avenue and Raymundo Avenue. Flooding appeared to be limited to the street and to front and back yards.

Permanente Creek. Permanente Creek in the City of Mountain View overbanked downstream of Amphitheater Parkway and upstream of Park Avenue.

North Central Zone

Calabazas Creek*. Calabazas Creek overtopped its banks twice in February. Flooding on February 2 - 3 appeared to be more severe than flooding which occurred on February 7, 1998. On February 3 at least seven apartments at the Gardens of Fontainbleu Apartment

Complex were inundated by water and mud. Several homes in the East Estates Neighborhood were also flooded. Three people from the Simms House, a home for low-income residents owned by the City of Cupertino, were evacuated. Water flowed down Stevens Creek Boulevard, flooding lower parking levels at Vallco Fashion Park. Sears suffered some damage.

Sunnyvale East Channel*. Overbanking and flooding occurred at Duane Avenue and downstream of Highway 237, flooding approximately twenty-six business and manufacturing properties. Floodwaters went over the levee at Caribbean Drive causing severe erosion on the slope and toe of the levee.

San Tomas Aquino Creek*. San Tomas Aquino Creek overbanked downstream of Highway 237 flooding Great America Parkway, the 3-Com site, and Yerba Buena Way.

Central Zone

Guadalupe River*. Guadalupe River overbanked near Alma Avenue in San Jose, flooding the Elks Lodge parking area and the Willow Street/Highway 87 underpass. Flows also broke out downstream of Virginia Street, flooding Highway 87 and closing the roadway.

Canoas Creek. Street flooding was observed on Santa Teresa Boulevard, Chesbro Avenue, and Indian Avenue. Overbanking occurred at Snell Avenue. At the corner of Sisse Drive and Snell Avenue, water was 12 to 16 inches deep in the center of the street.

East Zone

Coyote Creek. Floodwaters from Coyote Creek inundated the Golden Wheel Mobile Home Park. Residents were evacuated to a shelter opened by the Red Cross at Independence High School in San Jose. During the February 8 event, three houses on South 17th Street were flooded.

Calera Creek*. Hundreds of homes and apartments in a neighborhood of Milpitas between Dixon Landing Road and San Andreas Drive sustained damage from water flowing out of Calera and Berryessa creeks and local drainage systems. Fifty to 100 people were evacuated.

Berryessa Creek*. Overbanking occurred at the confluence of Piedmont Creek and Berryessa Creek in Milpitas, flooding an industrial area.

Los Coches Creek*. Los Coches Creek overbanked at Calaveras Boulevard in Milpitas and flowed down Piedmont Road.

South Zone

West Little Llagas Creek. West Little Llagas Creek overbanked at West Main Street and Hale Avenue in Morgan Hill flooding streets and garages along West Main Street.

Tennant Creek. Street flooding was observed on Hill Road at Shafer Avenue, on Conti Way, Kaybet Way, and a low-lying park at the end of Conti Way. Tennant Creek overbanked upstream of Maple Avenue, flooding an adjacent field.

Corrallitos Creek. Properties downstream of Colombet Avenue flooded.

East Little Llagas Creek. A field downstream of Monterey Road flooded. At the Seymour Avenue crossing, the creek overbanked and flowed across the road at an approximate depth of six inches.

Uvas Creek. Fields adjacent to the Pajaro River confluence were flooded.

* Flood map attached

LESSONS LEARNED

During this rainfall season the District experienced severe flooding in several areas. The following represents a summary of our experiences and lessons learned:

1. On several occasions the EOC was inadequate to effectively handle the volume of incoming calls.
2. There is no formal system in place to handle questions from individuals who are unable to speak English.
3. Many individuals at the District are willing to volunteer to support emergency operations.
4. We need an adequate procedure for handling people from the public who call to volunteer and those who call needing assistance.
5. There is still no system in place to effectively predict runoff in our smaller watersheds (flash floods).
6. It is advantageous to have staff from the City of San Jose in the EOC.
7. The web site is helpful, used by the public, has tremendous potential, and needs to be exploited.
8. Operations and Maintenance headquartered in EOC worked well.
9. Phone bank/switchboard worked well. In addition to being used during evenings and weekends, the EOC switchboard was utilized with the administration building switchboard to provide a dual operation during peak call periods.
10. Public Information's single-page, twice daily flood update was beneficial to District staff.

11. EOC status boards do not yet adequately display the right, current information and need improvement, however this information is available on the web site.

12. We need training classes for all volunteers prior to emergency.

13. We need to develop a winter preparedness guide to web site.

14. We need training for everyone to effectively use the web site during emergencies.

15. Sandbag location address information and maps need to be accurate.

16. If we move sandbag locations, we need to remove signs; so citizens don't look for sandbags at a closed location.

17. There is a need to provide brochures in Spanish, particularly the *FloodSAFE Sandbag Guidelines for Homeowners*.

18. Disabled and elderly individuals need assistance with sandbags.

19. "Hey Noah" Campaign was successful.

20. "Hey Noah" hotline was available in both English and Spanish and was useful.

21. It was beneficial to have translators present at District meetings and sandbag workshops.

22. Log books to document continuous emergency activities were helpful.

23. El Niño Task Force was a well functioning and highly effective team.

24. Video taping provided valuable information on extent and damage caused by flooding.

RECOMMENDATIONS

1. Continue "El Niño" Task Force or Winter Preparedness Team in future years.

2. Adopt the Sandbag Policy proposed by the El Niño Task Force (draft attached).

3. Process for responding to El Niño correspondence should be utilized for all District correspondence.

4. Install real-time camera images at key locations throughout the District (examples - sandbag sites so the public and staff can see the current status of a sandbag distribution site; stream locations that are likely to flood in extreme events, etc.).

5. Prepare graphical plots of real-time gage data to add another format to view stream flow, reservoir storage and precipitation data. In particular, this will allow the viewer to more easily identify the current trend in the hydrologic conditions (is the stream rising or falling?), especially when these plots are presented in combinations such as several locations on a stream, reservoir storage level and nearby precipitation accumulations, all on the same page for comparison.

6. Improve the data base organization of the county parcel and road data.

7. Expand other applications that provide web browser access to the GIS formatted data.

8. Future EOC should have more stations to receive incoming calls.

9. Develop system for handling foreign language calls.

10. Utilize District volunteers and train before emergencies.

11. Develop procedure for handling public volunteers.

12. Continue search for system to forecast flooding on small watersheds (flash flooding).

13. Expand functionality of EOC status boards or utilize web site information.

14. Develop a guide and training for web site use (make more user friendly).

15. Provide consistent and current information on sandbag locations.

16. Develop multi lingual brochures.

17. Need source of volunteers to assist disabled and elderly.

18. Continue multimedia winter preparedness outreach.

19. Continue post flood meetings.

20. Continue log books of EOC activities.

21, Videotape the floodproofing classes to provide larger distribution of information.

22. Plan, design, and install a comprehensive stream flow measurement network which will allow the District to provide more specific information about where flooding may occur.

23. Continue pre-arranged video taping arrangements.

Santa Clara Valley Water District

MEMORANDUM

FC 14A (06-28-93)

TO: Stanley M. Williams

FROM: Marc J. Klemencic

SUBJECT: Flood Control Maintenance on Private Property

DATE: December 18, 1997

A number of citizens have indicated an interest in having the District enter private property to do maintenance work, because the citizens believe performance of the work would minimize the risk of flooding on their property. At its meeting of November 18, 1997, the Board of Directors acknowledged the necessity for extraordinary precautions due to the probability of higher than normal rainfall predicted for the coming winter. The Board requested that staff develop criteria under which the District could work on private property to remove obstructions to flow.

The District's policy is that the District will not perform flood control maintenance work on any facility where it does not have any permanent right of way for such facility. This policy is reflected in District Ordinance 83-2, Section 5.2A which states, "The District will so act in a reach or portion of a watercourse only if it has sufficient legal title or right of way therein." An exception is contained in Section 5.1 which states that the District "provides flood control service in an emergency to the extent of its resources and ability." Performance of that work would otherwise be the maintenance responsibility of the property owner. However, if found to be in the public interest and primarily for a public benefit, performing maintenance activities on non-District property is consistent with the District's policies on flood control responsibility.

This request has been considered by staff. The following criteria endeavors to minimize risks to the District and the private property owner. Risks include regulatory agency enforcement actions and property damage liability (Ref. Incorporation of Environmental Features in Flood Control Channels 1985, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS AD/A157 815). The following criteria will be applied for site consideration:

1. Proposed maintenance work on private property must primarily result in flood-damage reduction benefit to the community at large. Individual-property benefit does not meet criteria.

2. Obstructions to flow on private land may be removed if they are likely to move under high flows and adversely affect District or public facilities.

3. Where property owner has previously been notified of an outstanding District Ordinance 83-2 violation but the work is essential to the health, welfare, or safety of the general public, the work could be done. The District may choose to seek reimbursement from the owner through a nuisance or other enforcement action.

4. Work will not be performed on property owned by other public agencies.

5. Site must have safe and adequate access to problem area.

6. Work is limited to tree and debris dam removal; no sediment removal or permanent erosion repair will be performed.

Debris Dam Removal Threshold: The debris dam needs to be greater than 25% of the channel depth and obstruct greater than 75% of the channel bottom width.

Tree Removal Constraint: Trees subject to removal shall have a clear and present likelihood of causing a debris dam within the floodway of the channel in their present location. Trees for removal may be alive or dead and must extend horizontally across the channel floodway and be greater than twelve inches in diameter.

7. Maintenance work on private property will be performed only after staff has determined that such work will not interfere with satisfying the District's flood control responsibility on property where the District has right of way.

Prior to the commencement of maintenance work on private property, the attached right of entry permit must be signed by the private property owner.

Marc J. Klemencic
Operations and Maintenance Manager

cc: Board of Directors - 7

W. Wadlow	K. Whitlock
A. Bennetti	M. Klemencic
E. Cote	M. Hamer
J. Ortiz	R. Whipp

Right of Entry Permit

The undersigned hereby grant(s) permission to the Santa Clara Valley Water District (District) to enter upon that portion of the real property of the undersigned as shown on the map, diagram, or description, attached hereto marked Exhibit "A" and incorporated herein by this reference, for the purpose of gaining access to said property. The purpose for the access is to remove fallen or dead, standing trees or debris in the creek or floodway which may create a public flooding hazard. District is agreeing to perform the work which is otherwise the maintenance responsibility of the undersigned and/or adjacent property owners in order to prevent harm to the general public which may occur if the work is not performed.

Any fence which is opened by the District to allow access for maintenance vehicles will be restored following the removal of the trees or debris to its condition prior to the opening.

Permission granted hereby is not to be construed as a grant of title or of any interest therein to the real property affected hereby.

Undersigned shall, to the extent authorized by law, save and hold harmless the District from and on account of liability for damage to persons or property or property occasioned by said use of the real property shown on this permit.

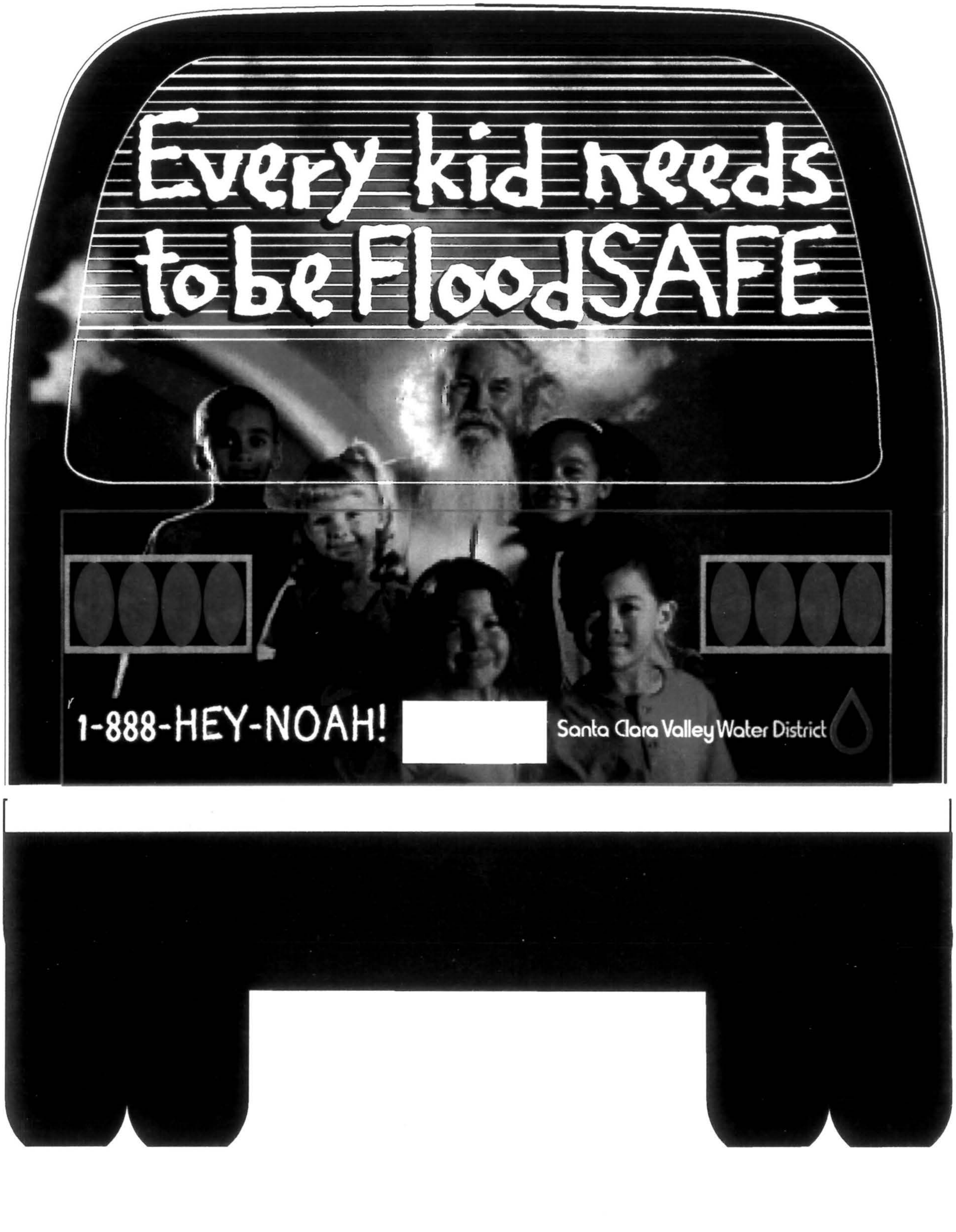
DATED: This_______________day of_______________, 1997

Name:_________________________

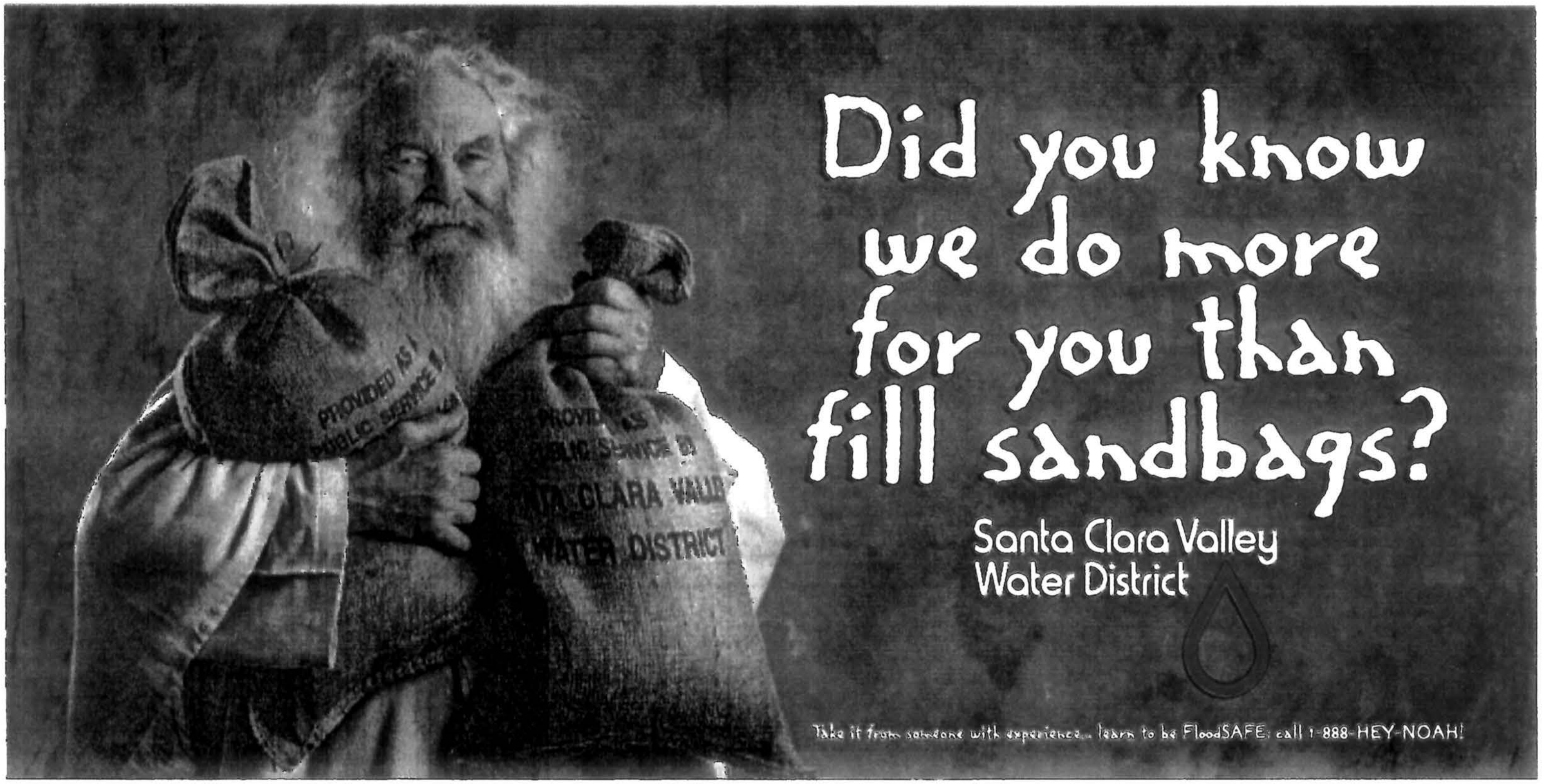
Address:_______________________

Name:_________________________

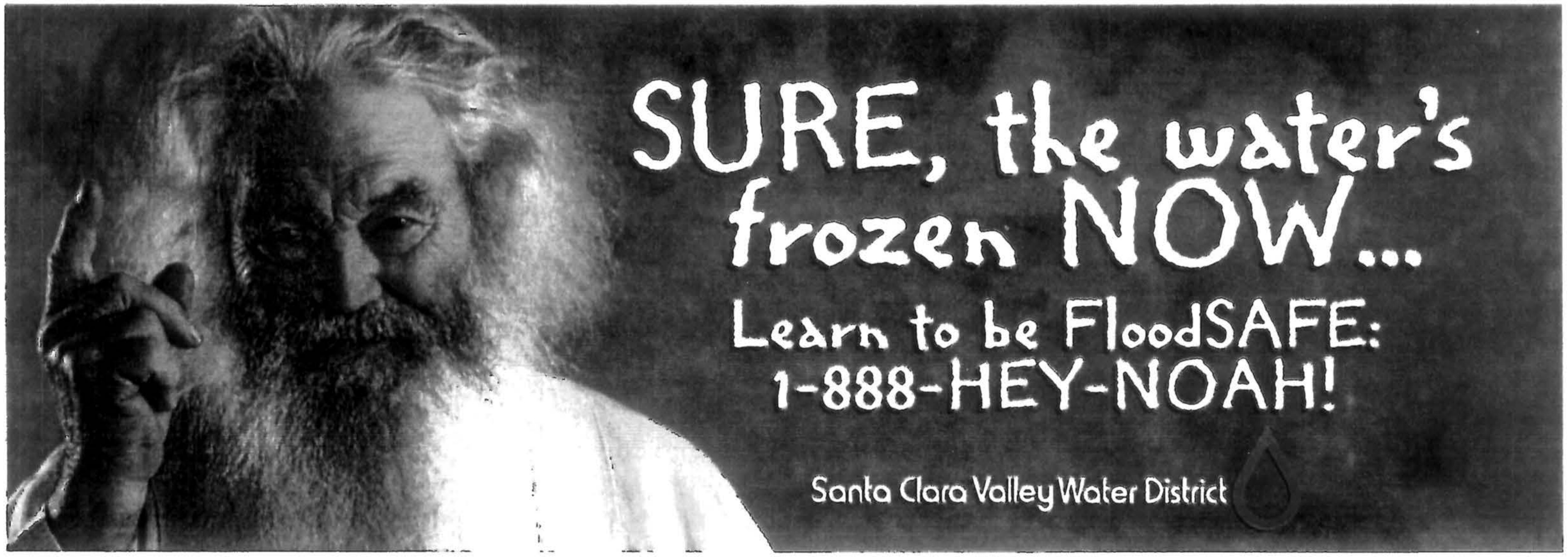
Address:_______________________


Every kid needs to be FloodSAFE
1-888-HEY-NOAH!
Santa Clara Valley Water District

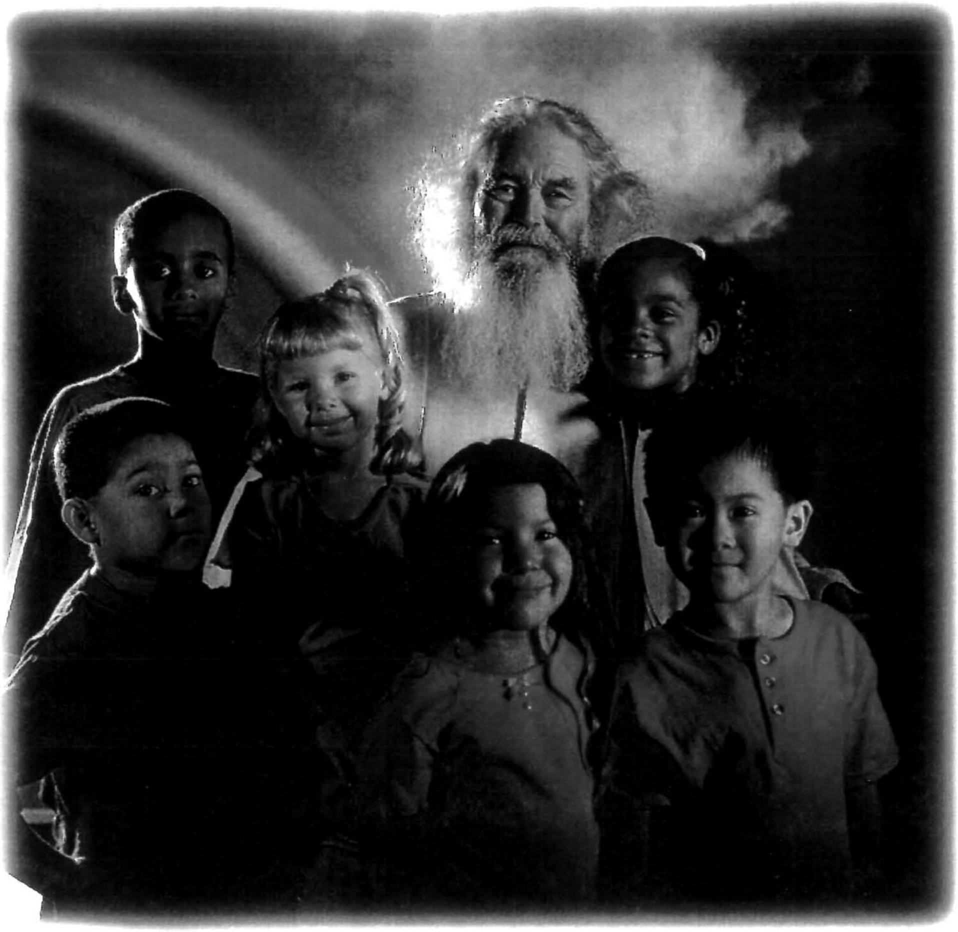
"FULL BACK" Transit • Digital vinyl graphics on bus backs • 10 buses
©1997 Santa Clara Valley Water District • Design: FORTUNE^2



72" x 40" Booth Banner
©1997 Santa Clara Valley
Water District
Design: FORTUNE2



96" x 34" Ice Rink Banner
©1997 Santa Clara Valley
Water District
Design: FORTUNE2



Noah's tips for FloodSAFE kids:

1. Make a family disaster plan for earthquakes, fires and floods...
2. Learn where your emergency kit, battery radio & flashlights are kept...
3. Tell your parents to keep the street's storm drains clear of leaves...
4. Never be a gawker & get in the way of work crews when it's flooding...
5. Don't ask to go watch the rising water, it's not safe...
6. Never bike or walk through rising flood waters...

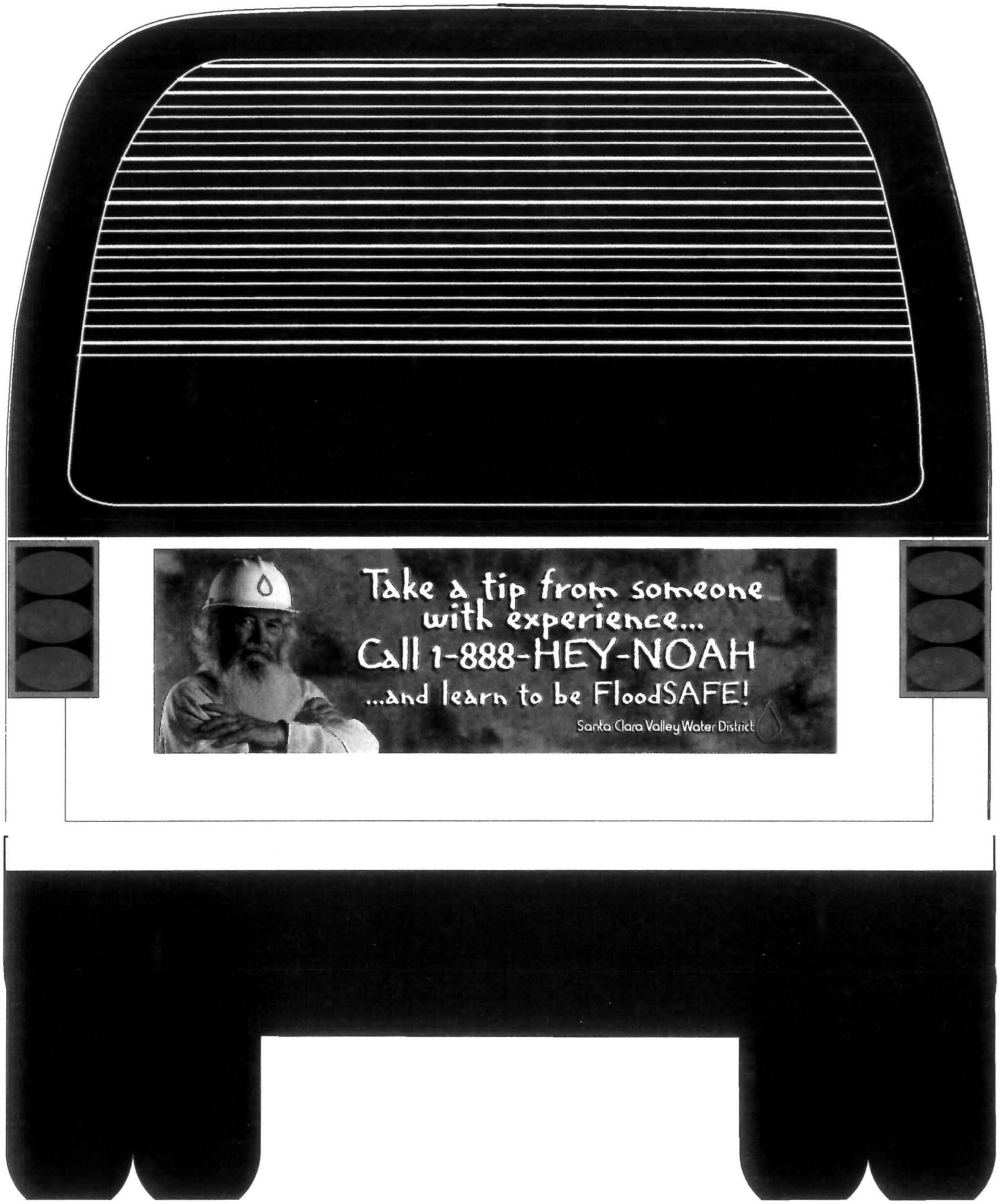
Learn to be FloodSAFE this winter. Call 1-888-HEY-NOAH!

(1-888-439-6624)

Santa Clara Valley Water District

19" x 28" Full color poster • FloodSAFE Kids

©1997 Santa Clara Valley Water District • Design: FORTUNE²


Take a tip from someone with experience...
Call 1-888-HEY-NOAH
...and learn to be FloodSAFE!
Santa Clara Valley Water District

"TAILLIGHT" Transit • Silkscreen graphics on bus backs • 70 buses
©1997 Santa Clara Valley Water District • Design: FORTUNE²

Noah Knows

his earthquake kit works for floods too. Keep it in a place that's safe and high.
Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

to clean fallen leaves out of his gutters & storm drains...do you?

Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

NEVER to walk or drive through floodwaters...do you?

Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

his family needs a disaster plan for earthquakes, fires, AND floods...do you?
Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

if he needs flood insurance for his home...do you?

Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

where his nearest sandbag pickup station is...do you?

Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

not to be a gawker and get in the way of work crews when it's flooding...do you?
Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

to keep valuables & important papers in a bank safety deposit box or other safe place...do you?
Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

never to take kids to watch rising flood waters, because it's not safe...do you?
Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

Noah Knows

where his flashlight, batteries & emergency kit are...do you?

Be FloodSAFE this winter.
Call 1-888-HEY-NOAH!

Santa Clara Valley Water District

2col x 10" · 10 Flood Safety Tips · vertical format (ads also in horizontal format) · Ads shown approx 35% actual size

DRAFT SANDBAG POLICY

I. PURPOSE:

The purpose of this policy is to provide guidance on the distribution of sandbags to the general public in Santa Clara County for flood protection of homes, businesses, and personal property.

II. POLICY

It is the policy of the District to provide sandbags to the general public in Santa Clara County for flood protection of homes, businesses, and personal property. Sandbags will be made available at District satellite locations throughout the county and at municipal and county sites. Sandbags will be available at these sites no later than December 1 through April 15 each year.

III. PROCEDURES

District satellite sandbag pickup sites will have filled bags and/or sand and empty bags available for the public to pick up 24 hours a day, seven (7) days a week, between the above dates.

Requests for a large number of bags (greater than 200) must be referred to the sandbag program coordinator, as designated by the Operations and Maintenance Group Manager.

The District will provide a mutually-agreed-upon number of empty bags to municipal and county sites for distribution to the public during emergencies. The agencies will provide the sand. The District will not provide filled bags to these agencies.

The District will not deliver sandbags to residents, businesses, or neighborhood groups.

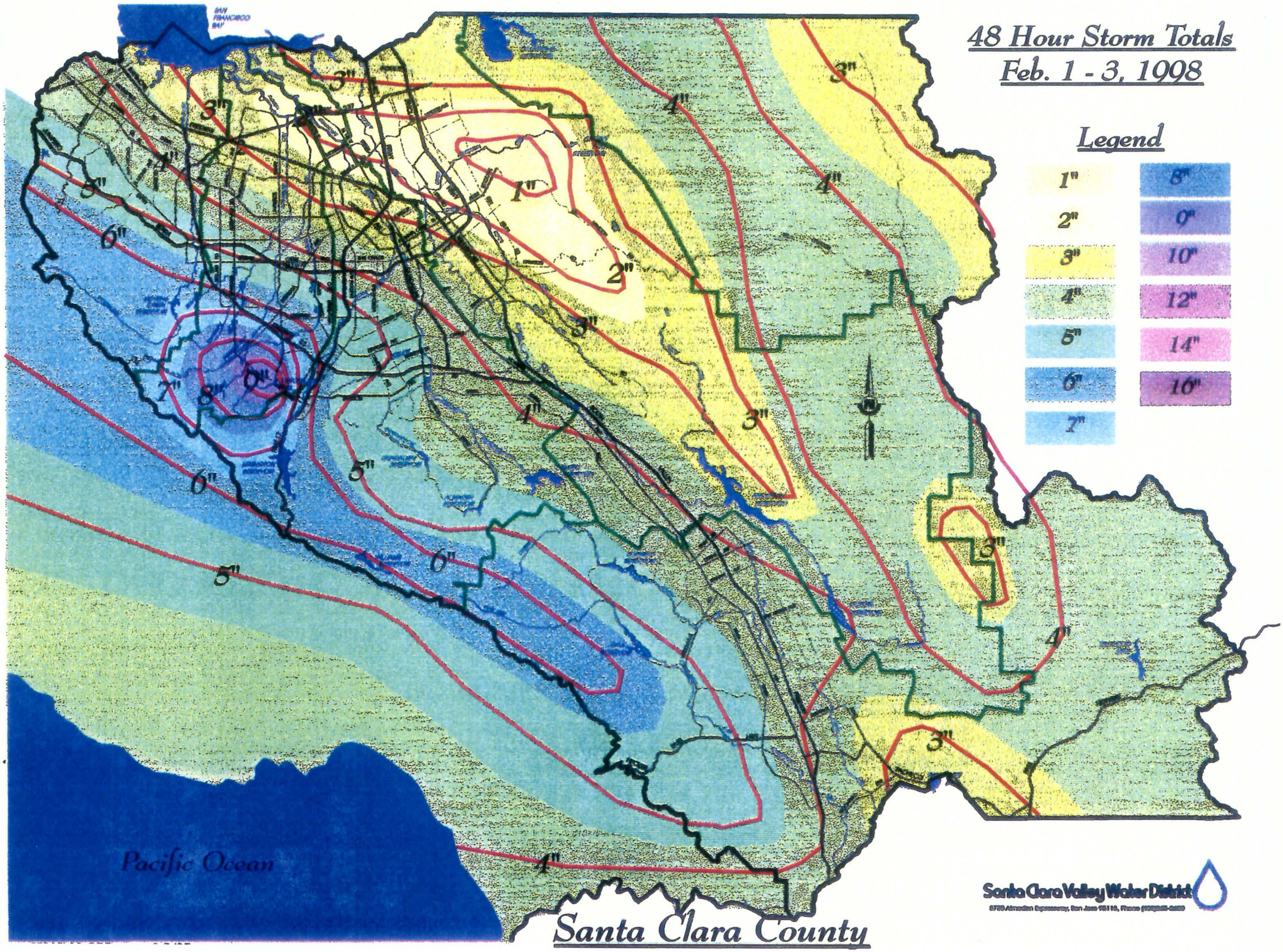
The District will not pick up used bags, but they may be returned to the satellite sites no later than May 15.

Empty sandbags may be distributed to residents and businesses. Sand alone is not made available for public use.

During emergencies and mutual aid conditions, exceptions may be made to the above policy and procedures.

The District's purpose in offering sandbags free of charge to the public is solely for emergency flood fighting. Sandbags are not to be taken for construction or other use unrelated to flood fighting. Obtaining sandbags from the District for non flood fighting purposes may be deemed a theft of public property, punishable under law.

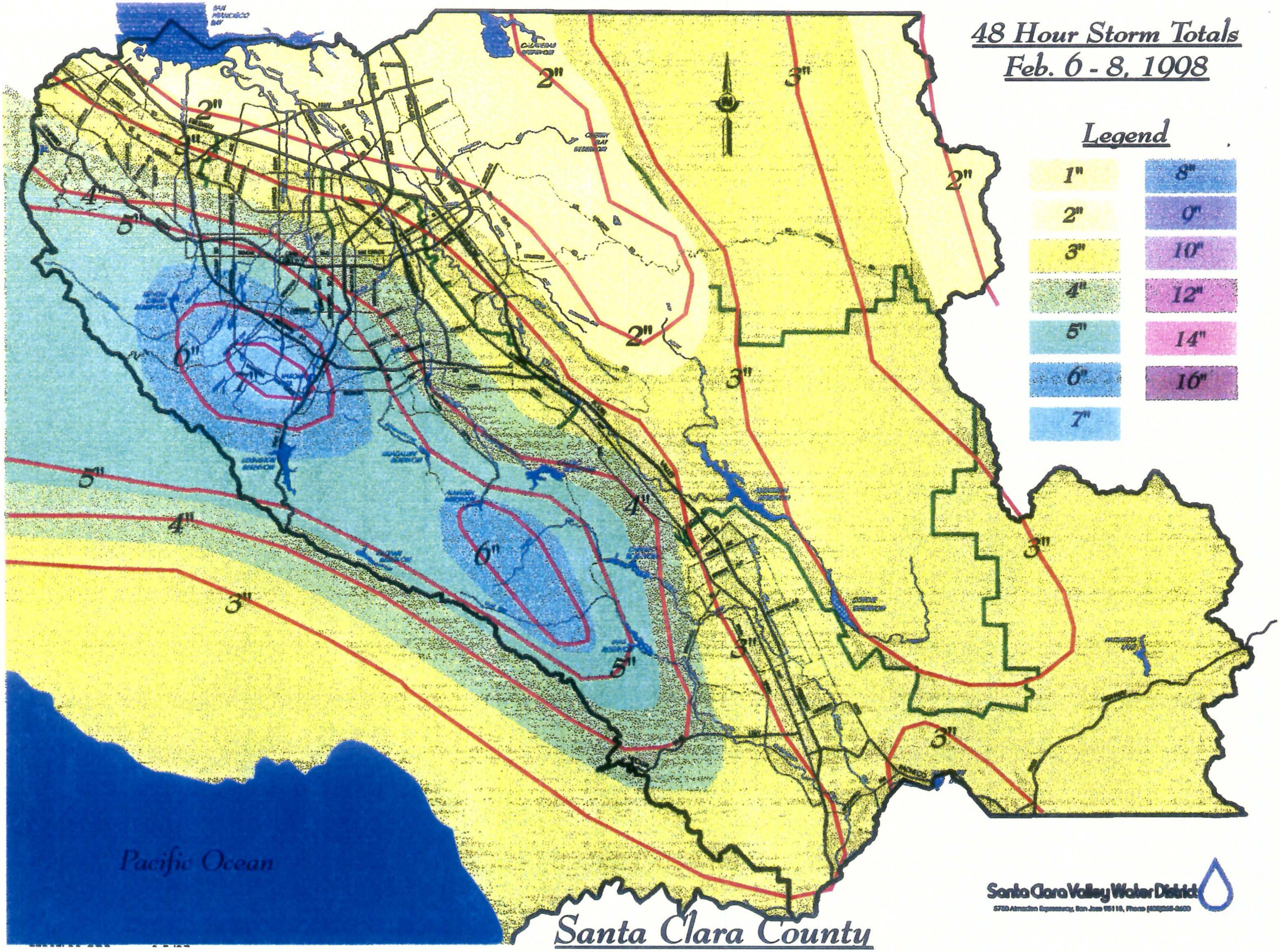
48 Hour Storm Totals
Feb. 1 - 3, 1998



Santa Clara County

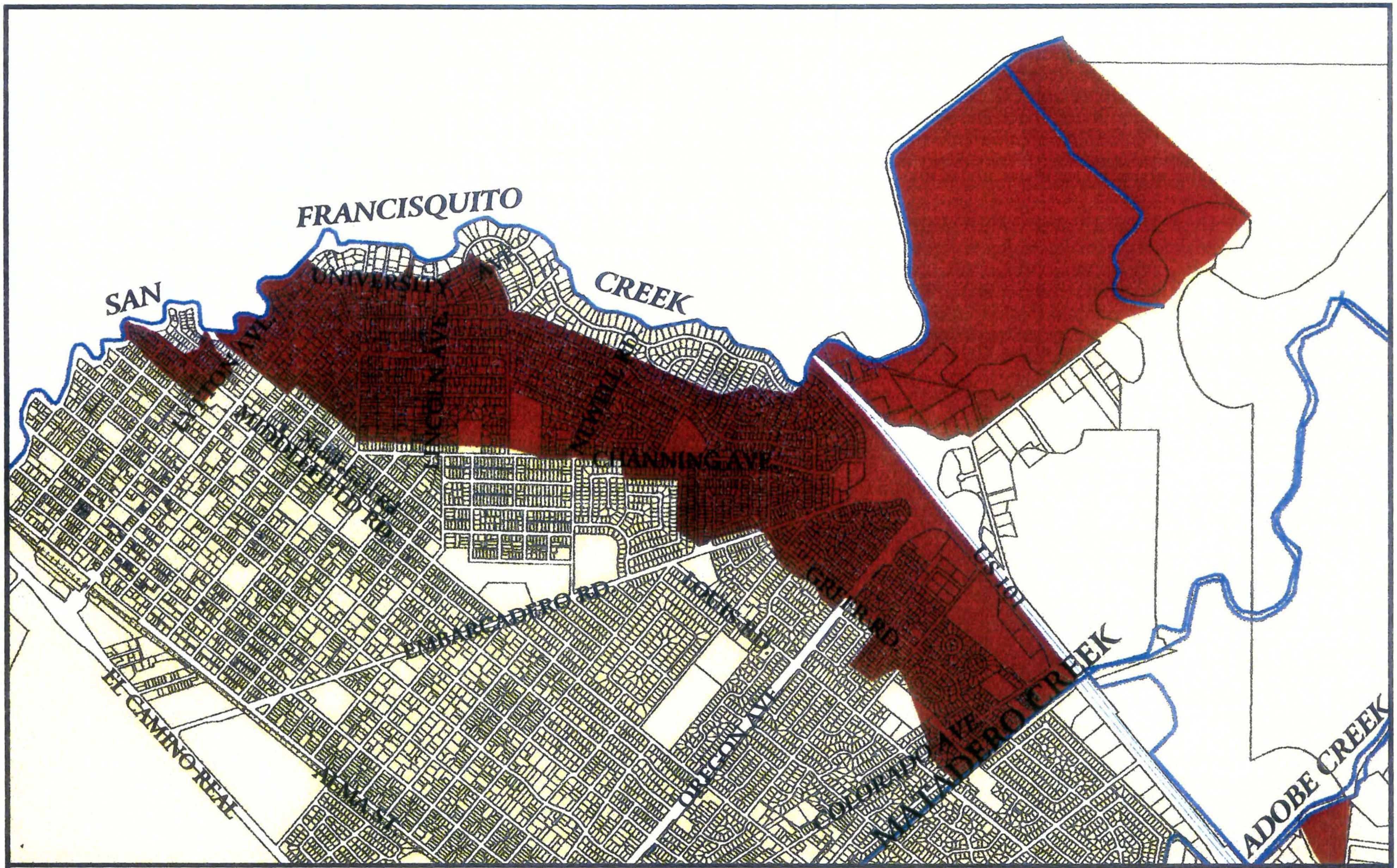
Santa Clara Valley Water District
5750 Almaden Expressway, San Jose 95118, Phone (408)265-2600

48 Hour Storm Totals
Feb. 6 - 8, 1998

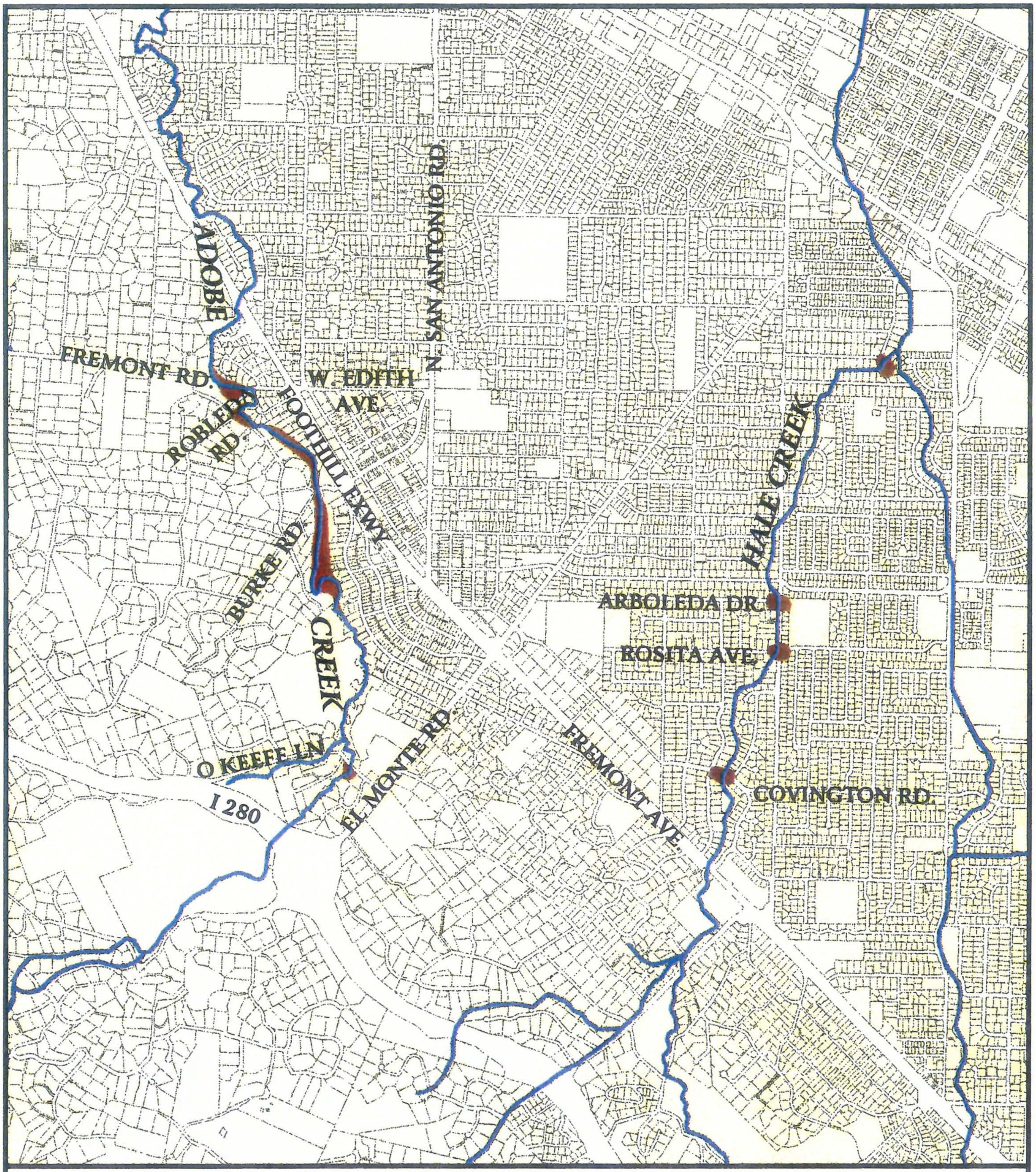


Santa Clara County

Santa Clara Valley Water District
5750 Almaden Expressway, San Jose 95118, Phone (408)265-2600



SAN FRANCISQUITO CREEK FLOODING
FEBRUARY 1998



ADOBE CREEK AND HALE CREEK FLOODING FEBRUARY 1998

FLOODED AREA ▨

SCALE

1000 0 1000 2000 Feet

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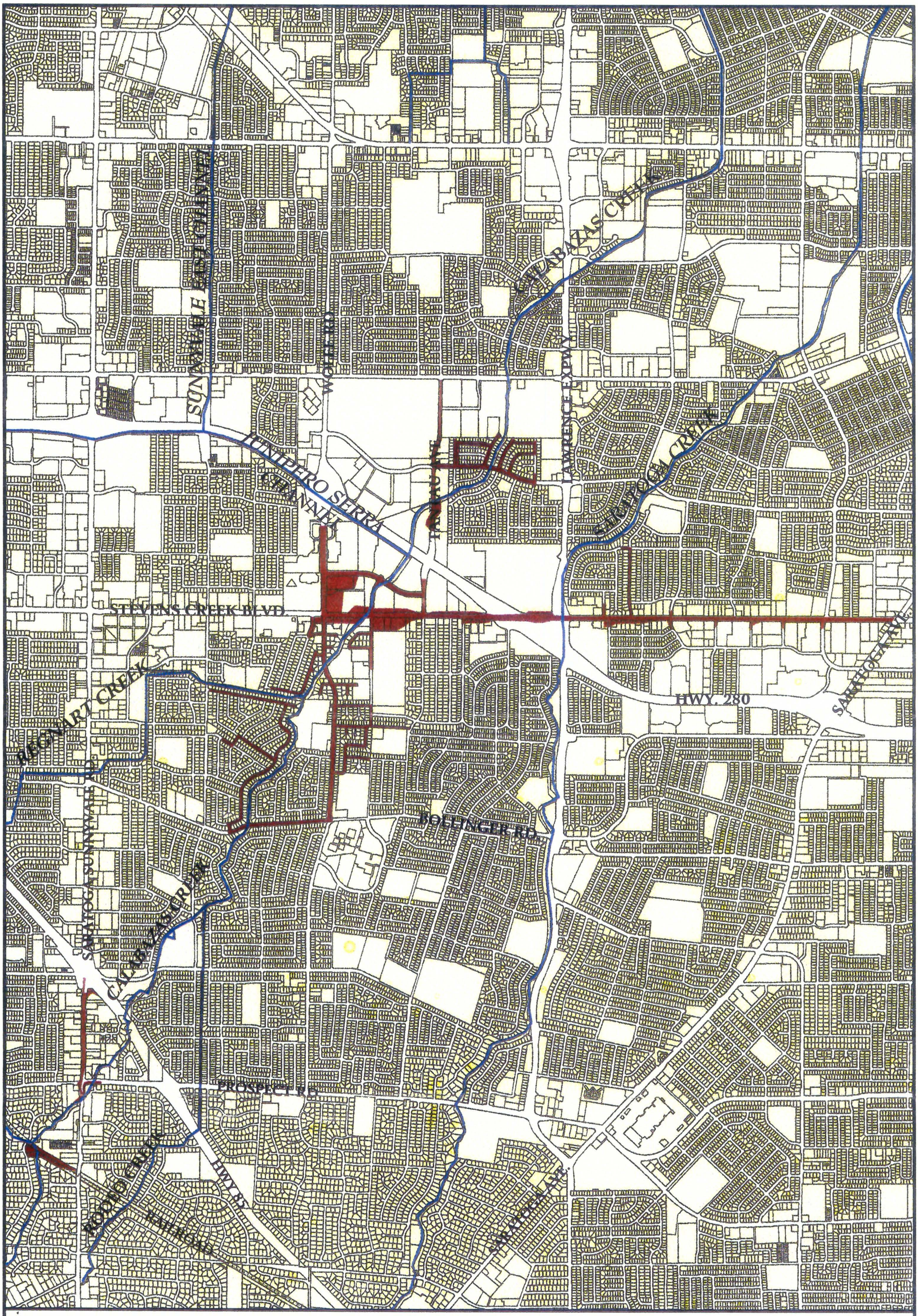

CALABAZAS CREEK FLOODING
FEBRUARY 1998

FLOODED AREA 🟥

SCALE
1000 0 1000 2000 Feet

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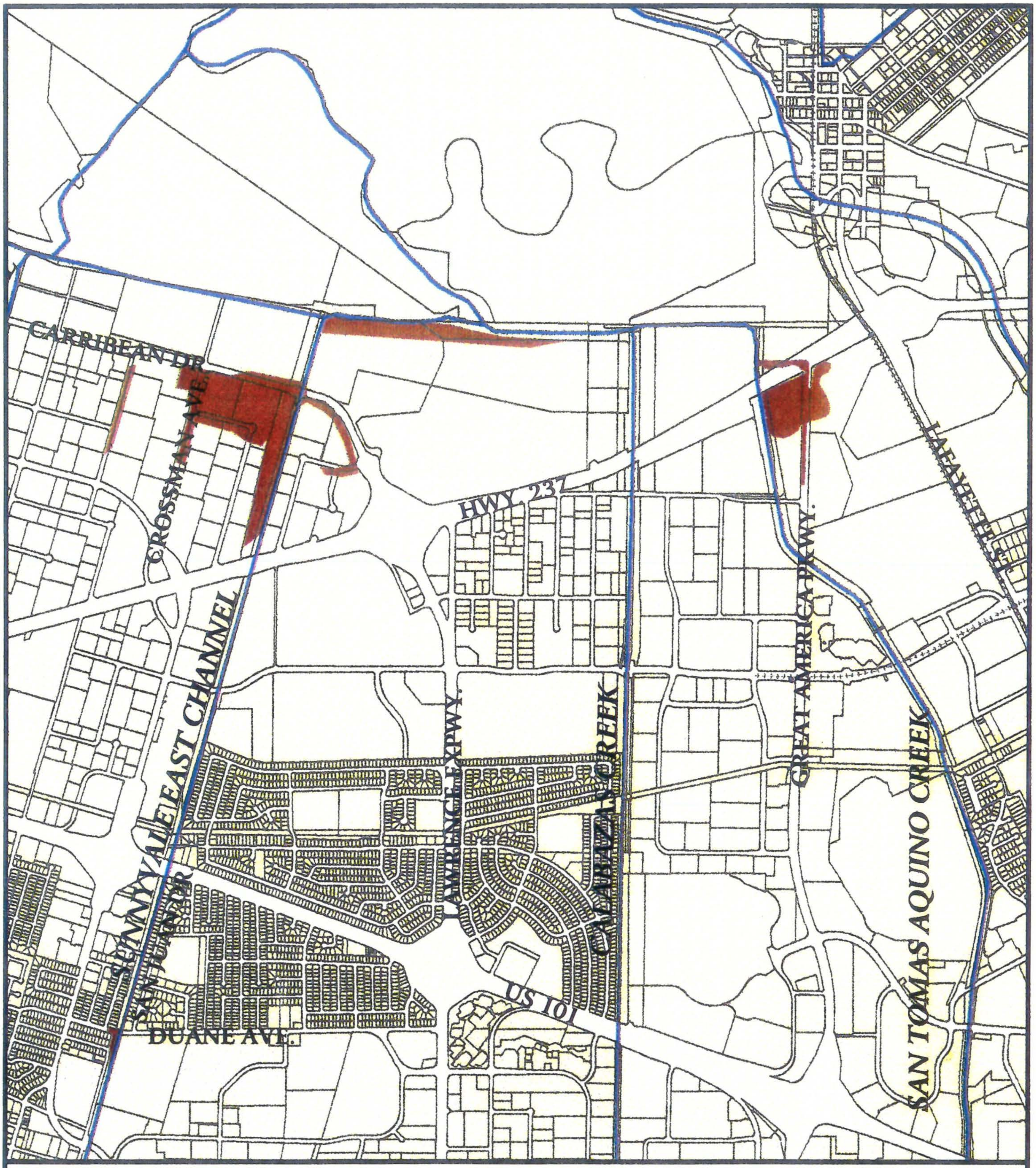
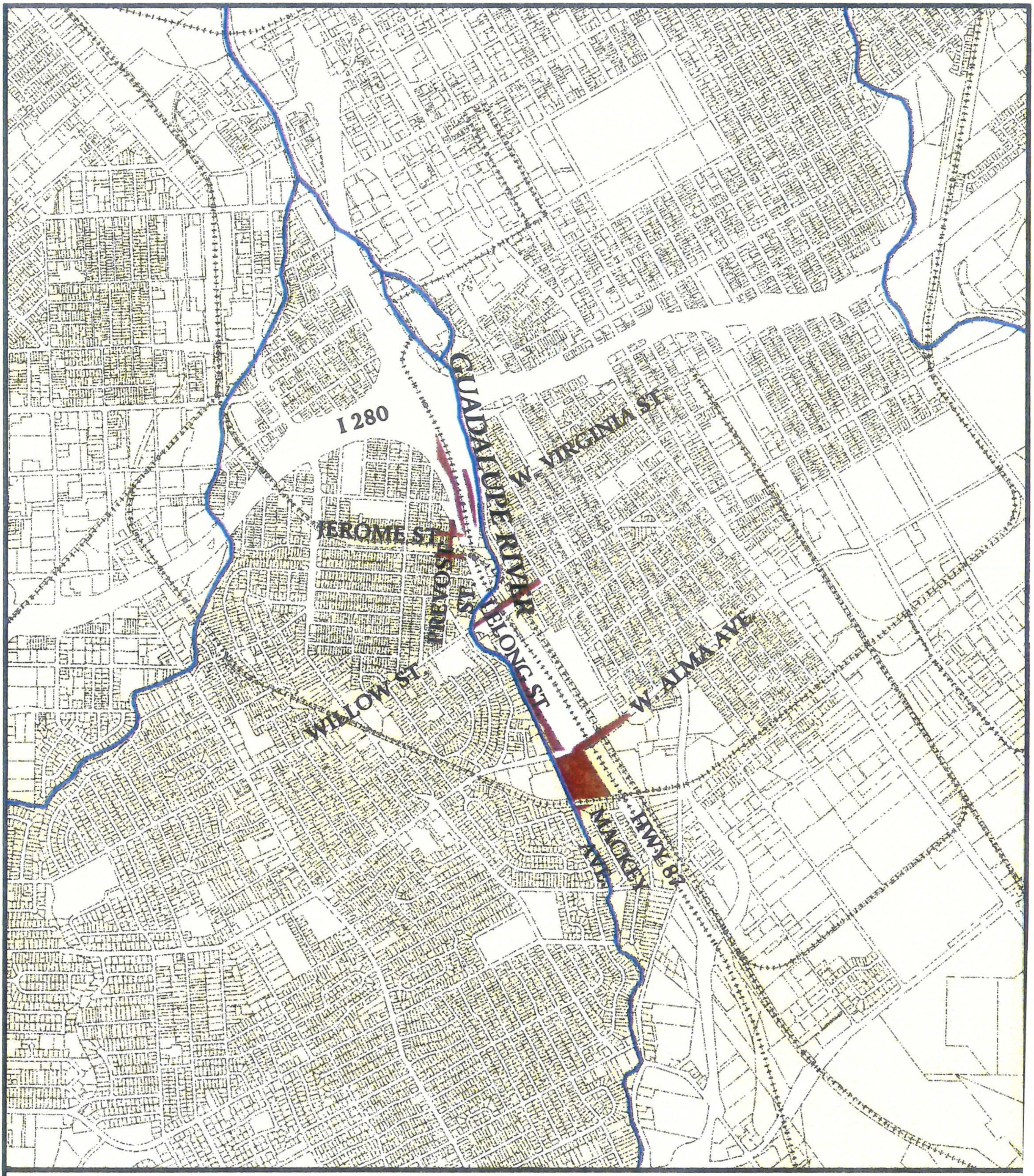


SUNNYVALE EAST CHANNEL AND
SAN TOMAS AQUINO CREEK FLOODING
FEBRUARY 1998



GUADALUPE RIVER
FLOODING
FEBRUARY 1998

FLOODED AREA 🟥

SCALE
1000 0 1000 2000 Feet

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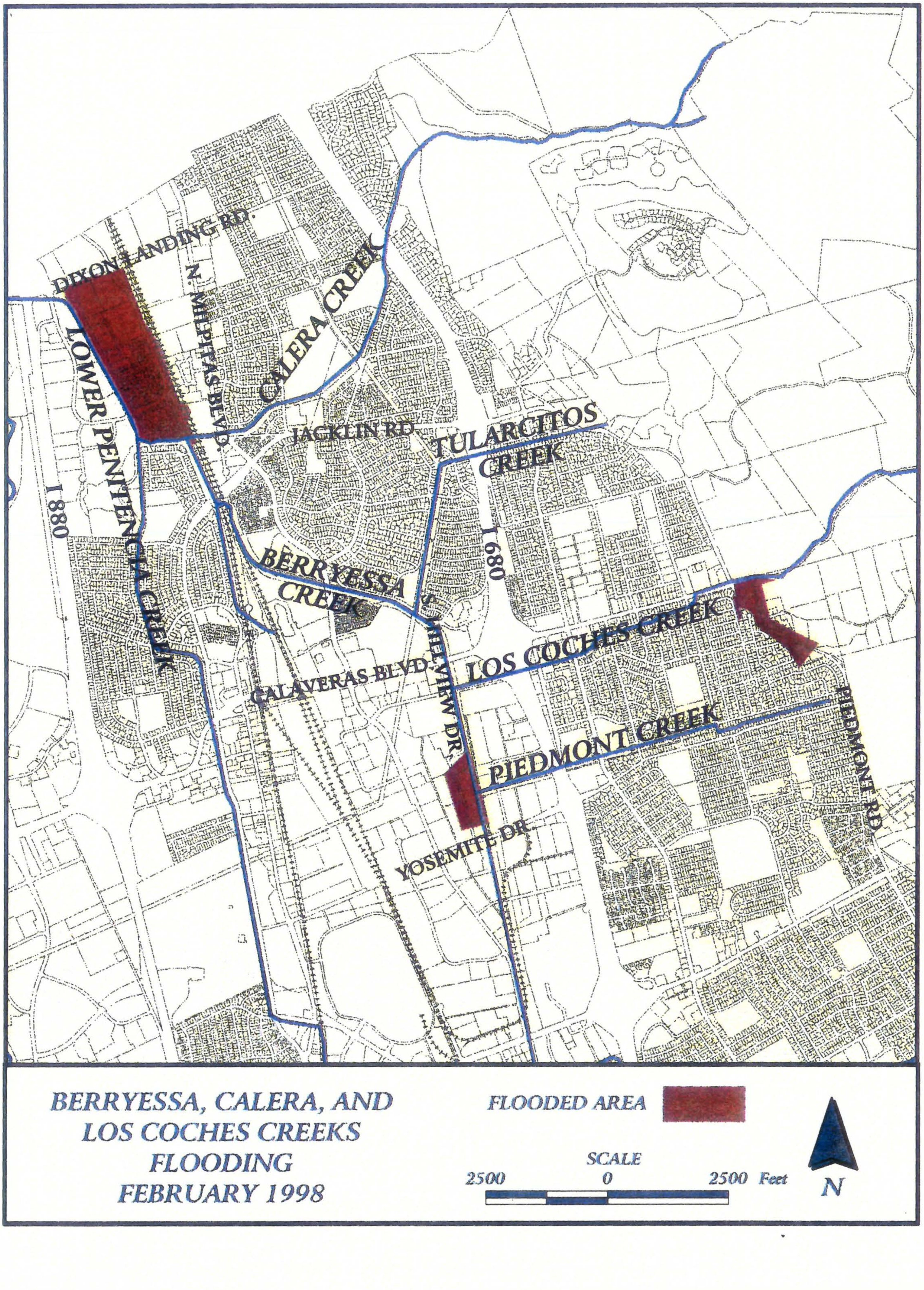

BERRYESSA, CALERA, AND
LOS COCHES CREEKS
FLOODING
FEBRUARY 1998